

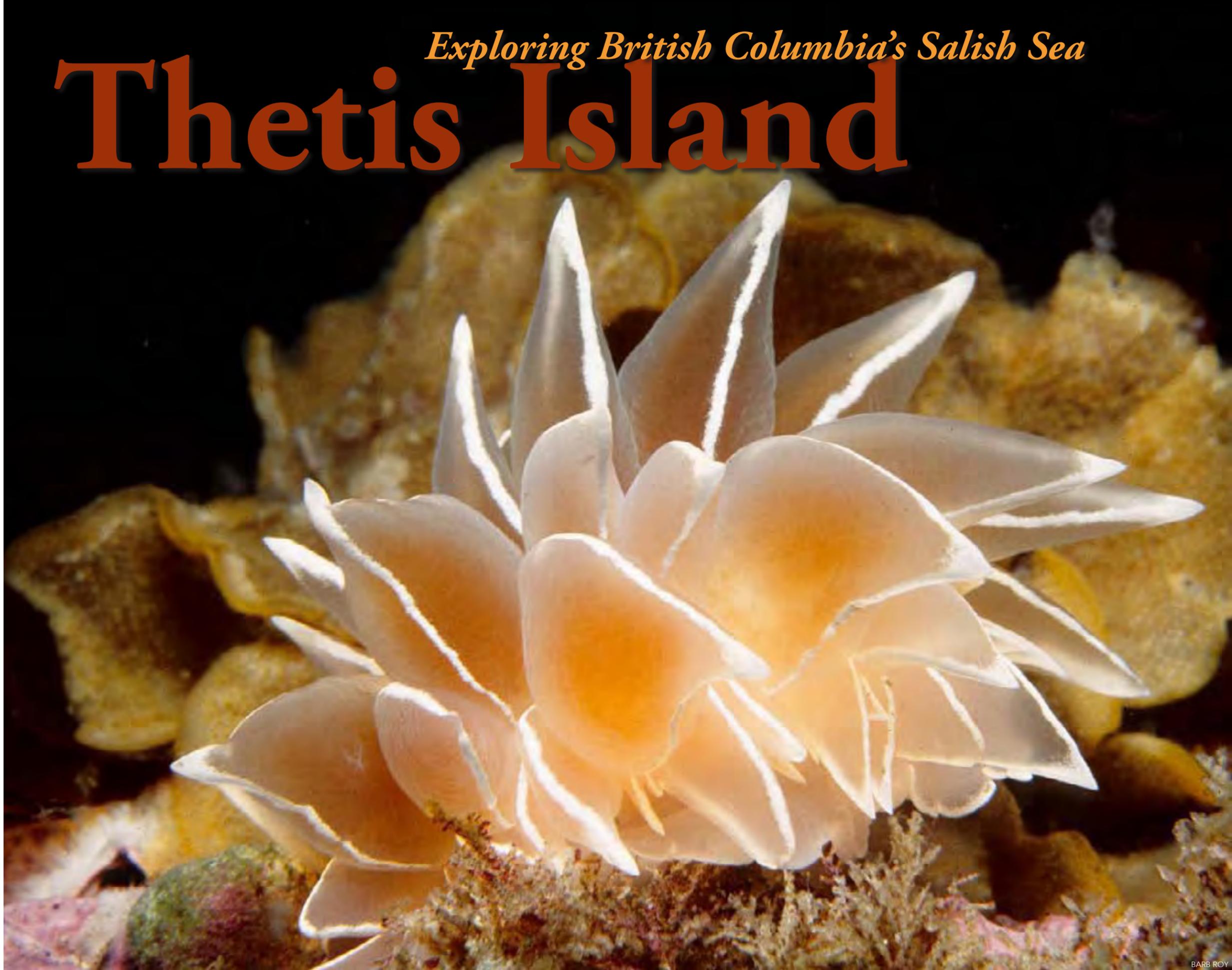
Exploring British Columbia's Salish Sea

Thetis Island

Text by Barb Roy
Photos by Barb Roy,
Andy Lamb and Gunild Symes

Tallen, my youngest daughter and part-time dive buddy entered the cool emerald coloured water with me as the current slowed to a stop to change direction (slack). Full of anticipation, Tallen and I descended down the southwest side of Virago Rock within Porlier Pass, a .65 km (.4 mile) wide channel between the islands of Valdez and Galiano. We swam past rockfish resting on overlapping fronds of kelp and through a dense thicket of bull kelp with tall spindly strands hoisting sacks of air high above with ribbon-like leaves flowing gently in a slight current. The rocky reef below wore a blanket of light pink coralline algae, dotted with tiny white and orange anemones. Before long the area opened up, revealing our prize—the wreckage of the 32-meter (105-foot) steamer tug, *Point Grey*, built in 1911. Looking up at the massive propeller, I marveled at its photogenic, yet mystic appearance.

Frosted
nudibranch



BARB ROY





BARB ROY

During February of 1949, while in-route with a load of railway cars in tow, the *Point Grey* tragically struck Virago Rock in thick fog. To make matters worse, the barge in tow rammed the tug from behind, pushing it higher onto the rocks. There the abandoned vessel remained until it rolled over and slipped beneath the surface during a storm in the early 1960s, coming to rest upside down in 10-15 meters (33-49 feet) of water. In late February of 1993, strong currents and stormy weather once again wreaked havoc, breaking the *Point Grey* in half and flipping the bow section right side up.

Tallen snapped me back to reality as she waved, beckoning my presence.

She hovered over the Underwater Archeology Society of British Columbia's (UASBC) plaque, pointing down. It has always amazed me how well some people can utilize facial expressions underwater; Tallen is one these people. She gleamed with a big smile on her face, pointing at four little bright red juvenile Puget Sound king crabs huddled tightly together. I tried to return the smile but was lucky to keep my regulator mouthpiece from falling out. I pointed at my camera housing, then to the huge prop, signifying 'wide angle'. She shrugged, and off she went to check out the rudder.

Marine life covered the two remaining prop blades and the third, which had

broken off, was too well camouflaged to identify. Each giant blade housed an array of invertebrate life, making me wish I would have also brought my macro system. Orange social tunicates, small cup corals and yellow zoanthids shared one of the blades with frosted nudibranchs, painted greenlings and dozens of decorator crabs, all protected by a light covering of red and green kelp, closely resembling leaf lettuce.

We continued down the port side over a caved-in hull with iron ribs stretching across below us. Upon each rib perched a population of tall white plumose anemones, feather stars and clusters of odd-looking swimming scallops. Wary lingcod and immense cabe-

LEFT: Tallen dives at a site off Galiano Island
TOP RIGHT: Propeller on the *Port Gray* wreck

BARB ROY

Thetis Island



zon, all nestled safely within the tangled wreckage, eyed our every move as we swam over.

Aware of our time restraints and not wanting to experience the 9-knot current this area is known for, we hurried to the bow section.

Yellow, orange and tan sponges helped to create collages of marine art along the way using what were once jagged pieces of hull for canvases. Spotting a rusty circular area, perhaps formerly housing a porthole, Tallen posed for a portrait shot, sticking her face through the opening, with tongue hanging out. What a ham...

Altogether, I counted six different species of nudibranchs, five species of anemones and four different kinds of crab. After another long glance at the mammoth propeller blades, we ascended to the bull kelp for our safety stop. Overall, our depth was a between 10-15 meters (33-49 feet) with moderately good underwater visibility, rendering it adequate for close, wide-angle photography.

This is just one of eight excellent sites divers have to explore when visiting Porlier Pass, part of Trincomali Channel and a dive region commonly referred to as the Chemainus and Thetis Island area, located on the southeastern side of Vancouver Island in British Columbia Canada.

"The local First Nation people refer to this area as the Salish Sea," informs Peter Luckham, owner and operator of the dive charter business 49th Parallel. "The Hul'qumi'num Mustimuhw people often refer to that way because the word tends to capture the notion of the Coast Salish people and their traditional territory—inland

waters stretching from Puget Sound to Johnstone Strait."

Peter has been diving in this area for over nine years and seems to genuinely enjoy introducing divers to underwater paradise year round. "Most are current dives, but with sufficient planning and guidance they are

easily within reach of most divers. The sheer variety of sea life is staggering. All are boat dives excepting Pringle Park and Coons Bay. The bottom at most sites is literally carpeted with white plumose anemones or green and purple sea urchins. When you see how many lingcod hang out here, and not just small ones, you begin to wonder why there is a fishing closure. Once you pull yourself away from the splendor of this spot and start looking closer, you start to see the really interesting stuff, like big crusty Puget Sound king crabs, war bonnets hiding in crevices, sponges, sea pens, and beautiful coloured nudibranchs of all shapes and sizes. The two wrecks here are a glimpse at marine history that you will not find anywhere else. We even found cloud sponge one day in the middle of the pass."

As we headed to our next dive site in Stuart Channel (low current area), closer to the town of Chemainus on Vancouver Island, Peter passionately continued to tell us about his business: "From the Chemainus community dock, we have six good sites

within 20 minutes of the Stuart Channel area and an additional six sites within a 30-40 minute boat ride. I can pick divers up at the community dock in Chemainus or on Thetis Island. Eight more sites are available to us on the Stuart Channel side and in Trincomali Channel, all within a 30-40 minute boat ride. Porlier Pass alone has eight sites, including three great wall dives!"

To accommodate divers, Peter has the *Fat Cat*, a 17-foot catamaran for individuals and couples and the *Xihwu Explorer*, a 37-foot



CLOCKWISE FROM ABOVE: Memorial plaque on *Port Gray* wreck; Sunflower sea-star; Lingcod on ledge; Tallen pokes a tongue out of the window of the 737 submerged at Xihwu Reef in 2006 by the Artificial Reef Society of British Columbia

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Thetis Island



BARB ROY



BARB ROY

CLOCKWISE FROM LEFT: Swimming anemone; Grunt Sculpin; Spiny pink scallop; Chemainus Harbour; Peter Luckham aboard the *Xihwu Explorer*, a 37-foot Alwest, serves groups of up to ten divers



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Alwest for groups of up to ten. His dive range extends as far north as Gabriola Passage and as far south to Sansum Narrows, including all islands between.

It was approaching dusk as we arrived at our next site, "Xihwu Reef", meaning red sea urchin reef. Most know it better as the location of the 100 foot long Boeing 737-200 jet plane, scuttled as an artificial reef in 2006 by the local dive community and the Artificial Reef Society of British Columbia (ARSBC). The plane sits 15 feet off the bottom on a custom built stand in 90 feet of water. All windows and doors have been removed and the forward and aft cargo bays are open.

Although wreck certification is

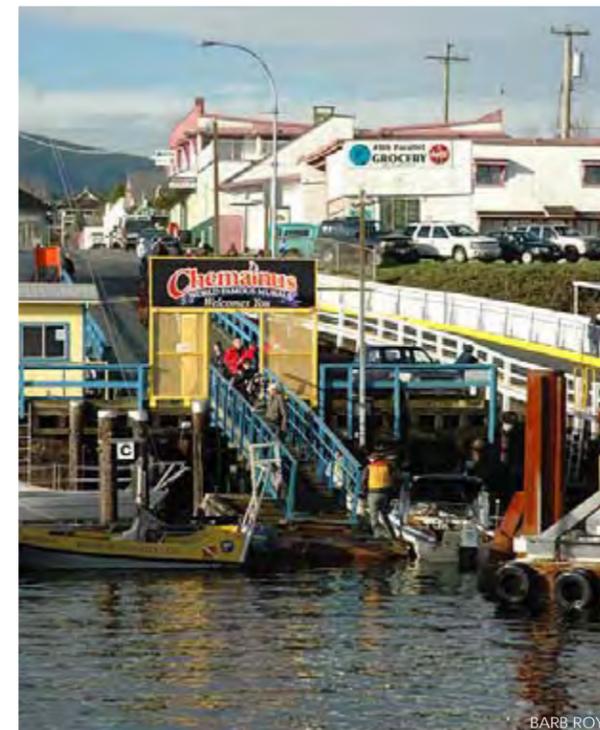
recommended for penetration, Tallen and I entered and swam around with ease. The body of the plane is about 12 feet in diameter and the distance between the front and rear exits are about 65 feet. Wingspan is 100 feet between wing-tips.

First Nation Carvers, Gus Modest of Kuper Island and Doug August of Cowichan created the markers used to honor the reef and as a tribute to the Hul'qumi'num Mustimuhw people. One marker was a large red sea urchin mask, placed on the nose of the plane. The other was a replica, used as a prize in the initial fundraiser when sinking the plane in 2006.

The mask on the front of the plane

dwarfed Tallen underwater as we explored the plane's cockpit, taking turns in the area where countless pilots once flew this mighty silver bird. Here, the maximum depth is 70 feet. A 95-foot depth can be found mid-ship and 150 can be reached off the stern or rear of the jet. Angling upwards, at 27 feet tall, the tail section was only 40 feet deep.

Our good friend Andy Lamb, co-owner of the Cedar Beach B&B on Thetis Island has recorded over 100 different species of critters on the plane as of July, 2008. As a zoologist and co-author of two marine identification books, Andy also offers marine education workshops and loves to dive on the plane



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ABOVE: Scene from the 2006 submerging of a 737 in Xihwu Reef by the Artificial Reef Society of British Columbia
LEFT: Tallen looks into the 737

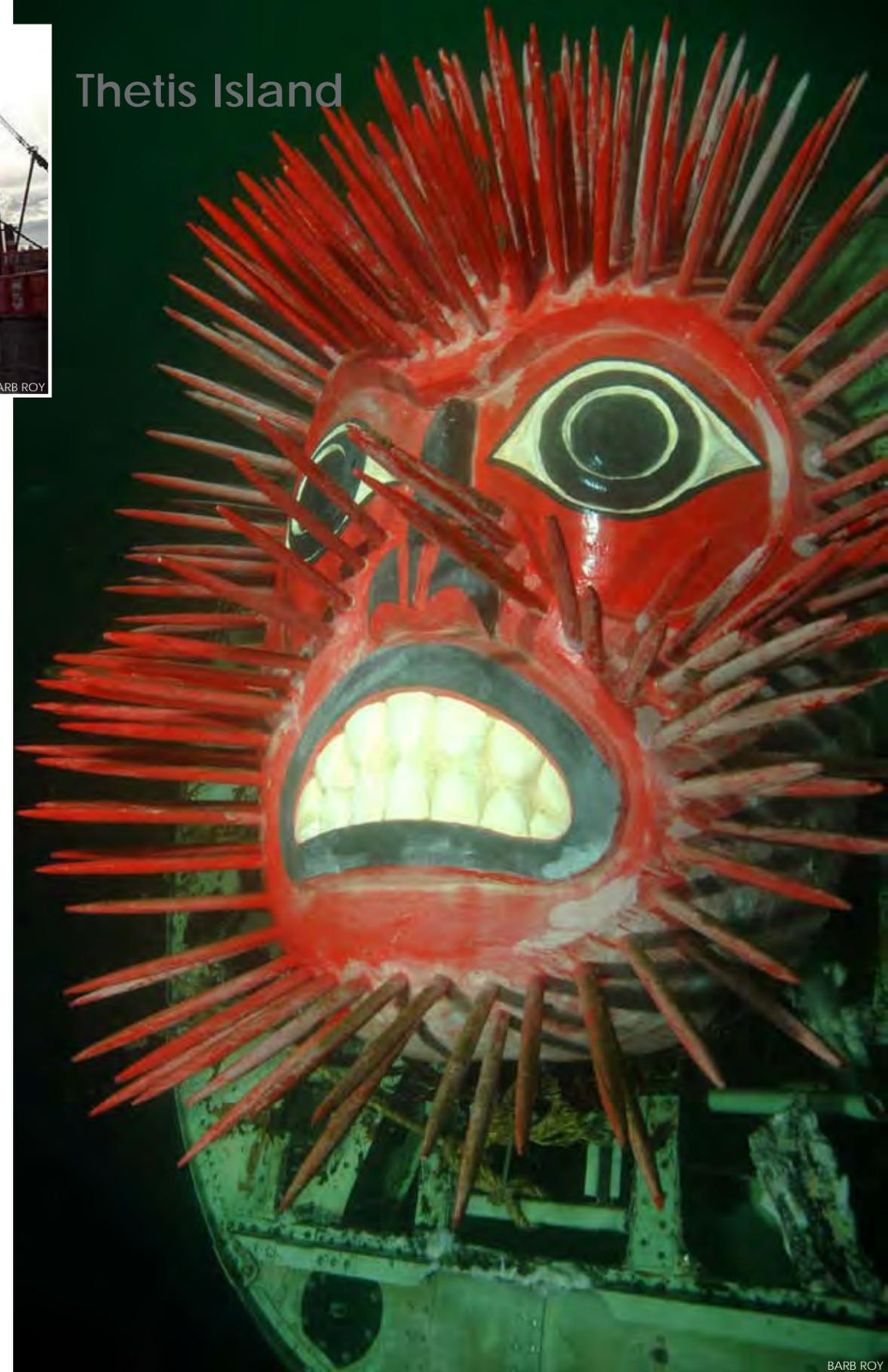
school kids on humorous, fun tours through the aquarium. I once saw her with a group of six and seven year olds walking by like crabs as they headed for the crustacean tanks.

When Virginia mentioned the night before that we would enjoy the view, I had no idea how scenic it would actually be the next morning! In the distance, I could see traces of fog lingering around the Southern Gulf Islands.

After a delicious homemade breakfast, we loaded up our dive gear, along with a hearty lunch Virginia had made for us, complete with soup, sandwiches and cookies. Andy took us down to the marina where we transferred our gear onto Peter's larger boat. The cabin was very spacious and warm, with a head and plenty of changing room. A fresh water hose was available for rinsing gear and cameras on deck.

Andy joined Peter and I for a dive on the historic wreck of the British Bark *Robert Kerr*, located north of Thetis Island between Miami and Ragged Islets, not far from the wreck of the *Miami*, which sank in 1900 after hitting Danger Reef. The once proud 190 foot wooden vessel *Robert Kerr* was built in Quebec in 1866 and originally sailed as a three-mast passenger carrier for Hudson's Bay Company across the ocean from Great Britain to the Pacific Coast. Historic records indicate the *Robert Kerr* was also used to rescue 150-200 people during Vancouver's great

Thetis Island

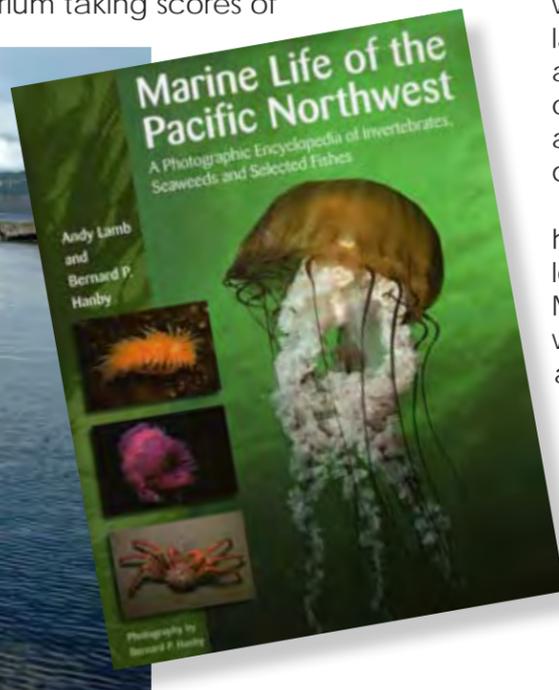


ABOVE: First Nation mask mounted on the submerged 737. FAR LEFT: Andy Lamb and Peter Luckham ready for a dive excursion in the 17-foot catamaran, *Fat Cat*; Andy Lamb's book, *Marine Life of the Pacific Northwest*

whenever possible. If air supply permits, there is also a nice reef nearby, boasting a healthy supply of critters. Octopus, wolf eels, shrimp, sea cucumbers and rockfish are often seen, along with the occasional sea lion or harbour seal, offering breathtaking encounters!

Andy and his wife Virginia put us up for the night at Cedar Beach in northwestern

style cozy rooms with thick down comforters. Dinner was glazed chicken with an assortment of fresh vegetables, topped off with a scrumptious dessert. Afterwards, we sat around in their large recreation room while a fire warmed us, listened to Andy tell about his experience teaching marine education at the Vancouver Aquarium. Tallen also volunteered for many years at the aquarium taking scores of





fire of 1886. The vessel was later sold and transformed into a coal carrying barge in 1885. In March of 1911, while in tow from Ladysmith to Vancouver with a full load of coal, the tug towing the *Robert Kerr* wandered off course during the middle of the night, causing the barge to hit Danger Reef, thereafter quickly sinking.

Today what's left of the barge sits upright in 35-70 feet of water with deck knees giving the structure a ghostly skeletal feature. Its cargo of coal lies scattered about the wreckage, blending in with the terrain, but the ship's captain and two iron masts are quite distinguishable even though they wear several layers of marine growth.

While Andy occupied himself with search out hiding critters in the ship's hull, Peter and I swam out away from the stern to examine the nearby debris field. Peter pointed out an old door key plate in the mud, careful not to disturb it. We came

across the ships' double mast ring next, lined with a patrol of copper rockfish. Peter and I gathered up Andy and headed for the bow section. I found Andy to be a lot like Tallen when diving, distracted by anything that moved and curious of what resided in every nook and cranny! I have learned over the years that this is actually a good thing, because both Andy and

Tallen have discovered quite a few new subjects for me to photograph over the years. During our gradual ascent up the reef, we came across several delicate rose stars, white-spotted anemones and giant swimming nudibranchs. Visibility proved to be viable for both wide angle and close-up photography.

Active Pass

My husband Wayne Grant joined me later in the year to explore several more dive sites Peter and Andy, introducing us to Active Point Pinnacle. The reef starting out shallow then dropped off to form a nice wall around 50 feet. Although the wall continued deeper, Wayne and I followed Andy and Peter for a while, then went off on our own, while Andy busied himself with his lingcod survey and Peter checked the anchor.

Visibility was about 30 feet. After seeing the abundance of invertebrate life, I was happy I had decided to use my 50mm macro lens instead of the wide angle. I



often hear about macro photography being so easy, but I find it quite challenging when using a big SLR housed camera, especially when trying to get close to a tiny critter the size of your little finger! The lens does however, allow very close focusing, but to get any form of light on the subject, strobes often need to be twisted awkwardly



CLOCKWISE FROM ABOVE: Beach at Cedar Beach B&B; Dining hall and living room of the lodge; View from the lodge; Twin mast ring of the *Robert Kerr* wreck; Delicious dinner by Victoria





ANDY LAMB



ANDY LAMB

we saw on the dive. Wayne was great at lighting my path with his HID light, turning a deeper, darker dive into a sunny day. When not modeling for me, he likes to float just above me pretending he is my shadow.

Several snails of varying shades of lavender were nestled on a cluster of yellow eggs about the size of corn kernels. Feather stars seemed to cover the site in general, as if someone had planted golden brown sea lilies everywhere. Lined chitons, huge plumose anemones, sea

cucumbers, tiger rockfish and perch were also seen. As for nudibranchs, there were a few very small ones, but the white frosted nudibranchs seemed the most plentiful.

Back on the boat, it didn't take us long to devour the yummy lunch Virginia had prepared. Peter filled us in on the areas potential. "We easily have more than a dozen good dive sites to choose from now, most within a short run from Thetis Island. If the weather is bad around Porlier Pass, we always have sites in



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CLOCKWISE TOP LEFT: Tiger Rockfish can be found hiding in the rocky crevices; Red flabellina on tail fin; Basket star; Coonstripe shrimp

Escape Reef
Escape Reef was our second location. Visibility looked a bit better here, but I wanted to leave my 50mm lens on anyway. We followed the rocky terrain down to 70 feet where it unfolded into a sandy sediment bottom. Each section we came across offered something different. Hiding under huge

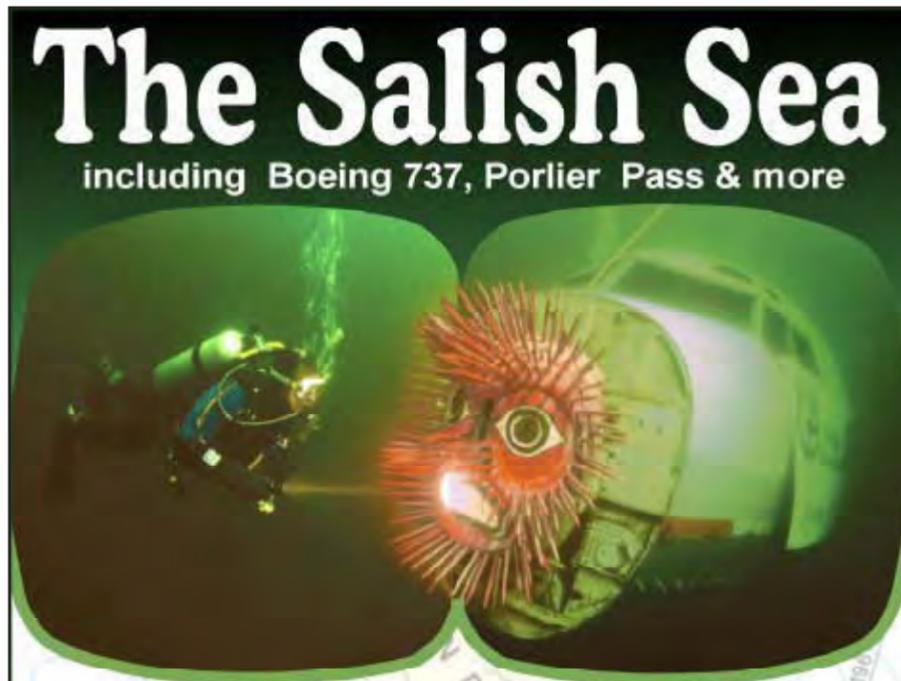
boulders were various rockfish, lingcod and kelp greenlings. Swimming scallops, glassy tunicates, rock scallops decorated in yellow boring sponge, clung to the rocky structures. A strange color variation of swimming anemones caught my attention; I found a whole group together, when I ventured closer.

Stuart Channel. Then, there is Trincomali Channel, but it can be current dependant in places."

"The main part of Active Pass is exceptional," added Andy. "I have done a lot of diving there and know the area well. You would love the colors for your photography!"



GUNILD SYMES



The Salish Sea
including Boeing 737, Porlier Pass & more

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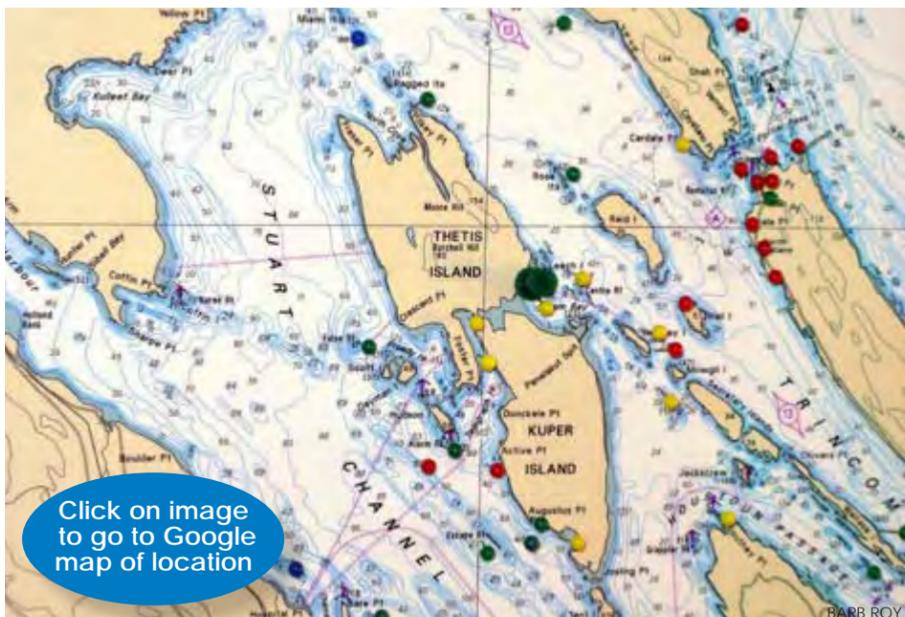


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vancouver island

Golden dirona nudibranch



Click on image to go to Google map of location

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Wayne found an area where the ocean floor seemed to move! Closer examination revealed hundreds of brittle stars. Sunflower, leather, rose and sunstars added rich colors to the scenery. As we ascended to do our safety stop, we discovered very different critters on and around a wall! This was perhaps even more colorful than the deeper depths, yielding yellow and white sponge, more anemones, small fish, featherduster worms, kelp crabs and a slim worm habitat. I found it hard to get out of the water when I discovered a heart crab at the end of my dive! Maybe it was the 47°F water temperature that helped me to exit.

Peter said later that he had found stubby squids while checking out the soft bottom during his dive. Andy found several structures on his dive, large enough to swim through! Peter instructed us to leave our gear onboard, and he would fill our tanks.

When asked what other wrecks were available to dive, Peter explained, "We have the 60-meter (190-foot) long wreck of the *Del Norte* (1868), a side-wheel schooner at the northeast entrance to Porlier Pass, the *HMS Panther* (1874) at Wallace Island and the *Peggy McNeill* (1923) a steam tug in Porlier Pass to choose from."

Andy had a map of the area on his wall showing all the dive

sites he and Peter have explored, all color coded with push pins denoting ok, good and excellent sites. There must have been a hundred locations marked.

I encourage visiting divers to plan for a two to three day visit in order to truly be able to sample some of the areas unique sites. There are several dive charter operators available and numerous bed & breakfast inns ready to accommodate, most requiring reservations. Visiting divers can carpool in their own vehicle, taking an automobile ferry from mainland Vancouver to Nanaimo or Swartz Bay. When traveling during the summer months, ferry reservations are highly recommended. Chemanius is located 19 miles south of Nanaimo and 50 miles north of Victoria. When not diving, check out the local museum, 37 murals and 12 sculptures along with art galleries and antique shops. Cedar Beach B&B also offers use of their kayaks to their guests. ■



ANDY LAMB



BARB ROY

TOP TO BOTTOM: View overlooking Thetis Island's Capernway Harbour, with Vancouver Island mountain ranges in the distance; Map of Thetis Island dive sites; Kayak shed at Cedar Beach B&B



fact file

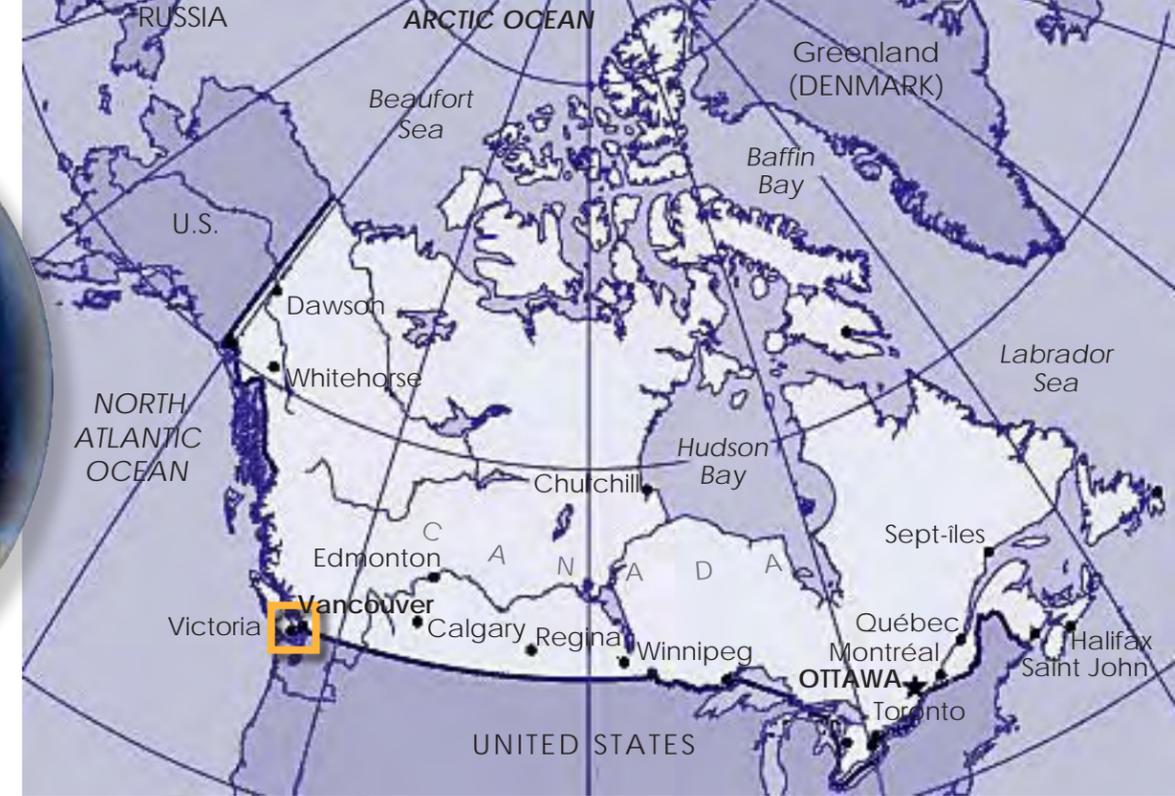


SOURCE: US CIA WORLD FACT BOOK

British Columbia, Canada



CLCOKWSIE FROM ABOVE: Location of British Columbia, Canada, on global map; Location of Thetis Island on map of Canada; Location of Thetis Island off Vancouver Island



History Canada is a country of rich natural resources and vast distances. In 1867, Canada became a self-governing territory while retaining its relationship with the British crown. The country has developed economically and technologically in parallel with its southern neighbor along an unfortified border, the United States. After a decade of budget cuts, the country's greatest political issues are improving education and health care services. Recently, the issue of reconciling Quebec's francophone heritage with the rest of the country's population which is anglophone, has receded after a referendum held by the Quebec government failed to pass in 1995. Government: confederation with parliamentary democracy.

Geography Located on the northern half of the North American continent, Canada is bordered by three oceans: the

North Atlantic Ocean on the east and the North Pacific Ocean on the west, as well as the Arctic Ocean to the north. After Russia, Canada is the second largest country in the world. It has a strategic position between Russia and the US on the north polar route; about 90% of Canadian are concentrated in the area within 160 km of the border with the US. Terrain: wide plains with mountains in the west and lowlands in the southeast; Natural resources: iron ore, nickel, zinc, copper, gold, lead, molybdenum, potash, diamonds, silver, fish, timber, wildlife, coal, petroleum, natural gas, hydropower; Natural hazards: continuous permafrost in north is a serious obstacle to development; as a result of the mixing of air masses from the Arctic, Pacific, and North American interior, cyclonic storms form east of the Rocky Mountains and produce most of the country's rain and snow east of the mountains.

Economy Canada closely resembles the US in its market-oriented economic system, pattern of production, and high living standards. It is an affluent, high-tech industrial society. Agriculture: wheat, barley, oilseed, tobacco, fruits, vegetables; dairy products; forest products; fish; Industries: transportation equipment, chemicals, processed and unprocessed minerals, food products; wood and paper products; fish products, petroleum and natural gas.

Climate varies from temperate in the south to subarctic and arctic in the north

Population 32,507,874 (July 2004 est.) Ethnicity: British Isles origin 28%, French origin 23%, other European 15%, Amerindian

2%, other, mostly Asian, African, Arab 6%, mixed background 26%; Religions: Roman Catholic 46%, Protestant 36%, other languages 18%

Currency Canadian dollar (CAD) Exchange rate: 1 CAD = \$.82 USD / € .63 EURO

Language English 59.3% (official), French 23.2% (official), other languages 17.5%

Web sites
Go BC Travel Guide: Thetis Island www.gobc.ca/thetis-island-travel
Thetis Island community website Thetisland.net

Dive Operators
British Columbia Dive Guide www.bcdiveguide.com
49th Parallel / Cedar Creek B&B www.divemaster.ca

Deco Chamber
Vancouver Coastal Health
10th Floor, 601 West Broadway
Vancouver, BC, V5Z 4C2
.866.884.0888 or 604.875.4252
www.vanhosp.bc.ca ■



There are many fine artisans who make their home on or near Thetis Island. These two dive pendants (left) were created by Dee Smith who handcrafts jewelry out of fused glass



The cozy getaway at Cedar Creek B&B



silver



www.seacam.com



Edited by
Mathias Carvalho
& Arnold Weisz

Back to the future

— *A Green sea turtle gets another chance at life*

Text and photos by Mathias Carvalho and Arnold Weisz

Crawling eagerly towards the ocean and a new future, a sea turtle was saved from certain death caused by the human impact on our oceans. There are ways for humans to harvest the ocean without killing aimlessly. The TAMAR Sea Turtle Project in Brazil shows us, over and over again, that this can actually work.

A Green Turtle (*Chelonia mydas*) carrying a tag number 55655, was unusually fortunate to be saved from certain death by drowning in a fishing net by local fishermen, then nursed back to health at the TAMAR sea turtle station in Ubatuba, Brazil. This is one of many success stories of how environmental awareness, implemented on a wide scale, helps animals to survive.

Until the 1980s, it was very common in Brazil to witness the hunting, killing and egg collecting of sea turtles. The animal's shell was made into a vast array of articles (glasses, combs, bracelets, rings,

and other sorts of ornaments). Turtles were generally captured and killed when ashore on the beach during egg laying season. The impact on the sea turtle population was staggering. These practices are since discouraged thanks to the conservation effort of the TAMAR Project. TAMAR has its name derived from the Brazilian Portuguese word for sea turtle—“Tartaruga Marinha”.

“Project TAMAR has already proven its worth as an international reference to other agencies. It has produced great results, but there is yet a lot to be accomplished,” said Berenice-Maria Gallo, regional coordinator in charge of the São Paulo State's TAMAR station.

Education

The purpose of this project is not only to care for the sea turtles but also to educate and work in partnership with the local communities. X-RAY MAG visited Project TAMAR visitor center in Ubatuba, the State of São Paulo.

Ubatuba is a popular tourist resort with many fantastic beaches, midway between Santos and Rio de Janeiro, which makes it an excellent place to attract visiting tourists. The TAMAR Center



provides cultural and leisure activities for visitors, with communicating aquatic tanks (recently remodeled to allow for the viewing of turtles under water).

The park is accessible to wheelchair users, and all income from the visitors are reverted back to ongoing projects and operating the center. Also available are souvenir shops, snack stands children's activities areas.

Environmental education is TAMAR's main weapon in the fight against extinction. The center has an auditorium for seminars, where training of interns, uni-



Green turtle 55655 can't wait to get back into the ocean, after some R&R at Tamar Ubatuba



Big ocean, big country, big responsibility

TAMAR FACTS:

Project TAMAR-IBAMA, jointly administered by the government of Brazil and the non-governmental organization, Fundação Pró-TAMAR, has established 18 conservation stations that cover 1,100 km of the Brazilian mainland coast (in the states of São Paulo, Rio de Janeiro, Espírito Santo, Bahia, Sergipe, and Ceará).

The program was initiated in 1980 to investigate and implement a program for the conservation of sea turtles. As a direct result of TAMAR's efforts, the harvest of pregnant females and their eggs has ceased in all major nesting areas.

The success of the program is based on the local participation of the fishing villages, including the employment of former egg poachers to patrol the area's beaches and protect known nests, education programs, and ecotourism.

The majority of stations are staffed year round and not only promote the conservation of endangered sea turtles, but also organize community festivals, support local schools and health care facilities, and assist in developing alternative sources of income for residents who once relied on the exploitation of sea turtles. ■

Text by Arnold Weisz

Brazil, with its immense coastline bears a large responsibility towards protecting sea turtles. With a coastline stretching more than 7,200 kilometres from above the equator and well down into the south Atlantic, the country houses five out of the world's seven sea turtle species. Sea turtles are famous for coming back to lay eggs on the beach where they themselves were born even though they have travelled there from very far away.

The Green sea turtles are perhaps the most famous travellers, migrating great distances. One example is the Florida-tagged Green turtles that have crossed the Caribbean and then been found in Brazilian waters. This puts pressure on the Brazilian conservation efforts, as their success has a direct impact on sea turtle populations in other parts of the world. Here again, the Green turtles show their impressive navigating skills.

Green turtles nest on Ascension Island in the south central Atlantic Ocean from January through April. They then head westward to Brazilian waters, travelling more than 1500 miles / 2300 kilometres to

their favourite feeding grounds.

The Royal Society tracked the post nesting migration of six Green turtle females from Ascension Island to Brazil, by tagging them with satellite devices. Five of them reached the proximity of the easternmost stretch of the Brazilian coast, covering 1,777-2,342 km in 33-47 days.

Many sea turtle species travel huge distances in open seas or along coastlines. This often brings them in close contact with commercial fisheries.

Researchers from the UK and Brazil have studied the effect that hook-and-line fisheries off south-eastern Brazilian has on sea turtles. Over a period, they followed a large fleet of almost 500 vessels and recorded 45 turtles from four different species being caught as by the fleet as bycatch.

The boats used longlines at different depths and trawling at different speeds in order to fish for Dolphin fish (*Coryphaena hippurus*), Bigeye tuna (*Thunnus obesus*), and Yellowfin tuna (*Thunnus albacares*) amongst other species.

The study made by the Institute of Biomedical and Life Sciences, the University of Glasgow, Tamar-IBAMA and Núcleo de Educação e Monitoramento Ambiental (NEMA) showed that monitoring the fleet and bycatch levels, development of mitigation measures, establishment of educational programs, government control over the fleet, and enforcement, are urgently required for the hook-and-line fisheries. ■

versities lectures and other educational activities take place. Audio-visual sessions are also available.

The center is an important focus point, but much of its

"... there are no desk-jockeys here..."

crucial work protecting sea turtles goes on somewhere else. On the beaches,

by each of the local inhabitant's doorsteps, by getting their fingernails dirty is how TAMAR's volunteers and staff really get things done—and show results.

TAMAR's main campaign, "Nem Tudo que Cai na Rede é Peixe" (Not all that are caught in the net are fish), ongoing for years now, teaches fishing communities how to reanimate sea turtles and return them to the sea, as well as calling for TAMAR's help.

"One of the success ingredients is that TAMAR's staff is out there, in the field, working and struggling to improve ongoing projects and initiatives; there are no desk-

jockeys here," said Berenice.

The main threat to sea turtles in Brazil today is incidental and predatory fishing activities. Accidentally trapped in fishing nets, hooks, and corals, and without means to rise to the surface to breathe, they often drown.

Social involvement

TAMAR works closely with sea faring and fishing communities in order to implement environmental and conservation practices. These communities are the main allies that TAMAR has, for they monitor the cast and have better access to incidents. They are more effective in promoting the cause than any effort by the organization.

"We could not

have done it without the support of local fishermen communities, the *caíçaras*.

Without them, very little would have been done to protect our sea turtles. They are their true guardians," said Berenice.

Chocolate sea turtles

TAMAR promotes self sustaining efforts to keep its operations going, besides federal and institutional grants:

- The paper factory: community youngsters produce recycled paper goods, to be sold as souvenirs. Forty percent of their profits goes back to TAMAR for the sustaining of this activity, and the rest goes to the youngsters and their families.
- Private sector partnerships: the "chocolate turtle" sales' royalties go to TAMAR and the preservation efforts.
- Local seamstresses that have, in keeping with their folk cultural activities, contributed with TAMAR by producing recycled textile goods also sold as souvenirs.

"TAMAR works on a self-sustaining model that has an active partnership with local communities, the goal being to support their culture and way of life without endangering turtles," said Berenice. ■



NOAA

Local fisherman gives hope to future generations

Text and photos by Mathias Carvalho & Arnold Weisz

As a comprehensive part of the TAMAR project, local fishermen have been included in the conservation of sea turtles. After we witnessed the release of a green turtle at Cedro Beach, a couple of kilometers outside Ubatuba, that has been nursed back to health after almost drowning in a fishing net, we had a chat with fisherman José Custódio Vieira, also known as "Seu Zeca", the very same person who found the turtle and saved it from certain death.

"It happens ever so often. The animal gets caught on the *cercado* and cannot free itself in time to reach the surface and breathe. A waste, really, for fishermen traditionally come to check their nets only at dawn, when it's usually too late," said Seu Zeca.

Seu Zeca changed all that. A



leader amongst fellow fishermen, he has helped to adapt a new practice, starting many years ago. Today, many of his associates—as well as other community members—now check their nets at dawn and in the evenings, finding any turtles trapped in time to set them free.

At Cedro Beach, Seu Zeca rules with an iron determination. He compensates for the tourism impact of visitors, and to the delight of many children, every time a *canoas* (local fishermen's traditional vessel) brings in a dazed sea turtle, offers some rare insight into sea turtle ecology.

TAMAR is called. In the meanwhile, Seu Zeca teaches any onlookers about the program, reciting the project's mantra by heart. He's a real champion for the cause.

Seu Zeca looks away, humbled, when we applaud his efforts. He just thinks he is doing his share, and cannot understand it when a wealthy tourist throws away a cigarette stub, or a plastic bottle, and pollutes the beach. "It's like throwing garbage in your own living room," he said.

Seu Zeca is proud to be able to say that many turtles were returned to the sea thanks to his efforts. "Still,

so many fishermen still harm them, but for what? We never eat turtles in our family, nor promote their killing in any way," he said.

Seu Zeca remembers, with a heavy heart, the long gone days when his parents would kill and eat sea turtles that were caught in their fishing nets. "I remember the agony of those turtles, lying on the kitchen table, their tear drops and their loud cry when their throats were cut off."

He has tasted turtle meat only once—his grandfather insisted—and readily agrees, it's tasty, but never

since has he wanted to do so again. "My own son is a hardcore conservationist; he won't let me kill a snake in our yard, let alone harm a sea turtle."

Seu Zeca is very proud of his children, and the achievements he and others produced, but agrees there is still a lot to be done. "Many won't support TAMAR's work, because they are afraid that it will get them into trouble with the authorities if they report any entrapments, even accidental ones. So, they kill the turtles and eat them instead, covering their tracks—that is just dumb!" he said.

TAMAR taught Seu Zeca and many other locals how to perform CPR on sea turtles that can pass out from lack of breathing. By pressing down their chests and

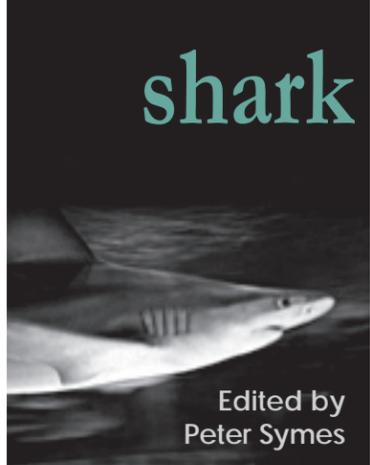
turning them around, they will vomit swallowed water and start breathing again, although many remain too weak and need further treatment—and that is when they call the TAMAR teams.

"The other day, as we were rescuing a turtle and performing CPR, a young boy—a tourist who had been to a TAMAR lecture—began to tell the onlookers how it was done, and did so just perfectly. That gives me hope for future generations, as well as the future of sea turtle generations to come," said Seu Zeca. ■



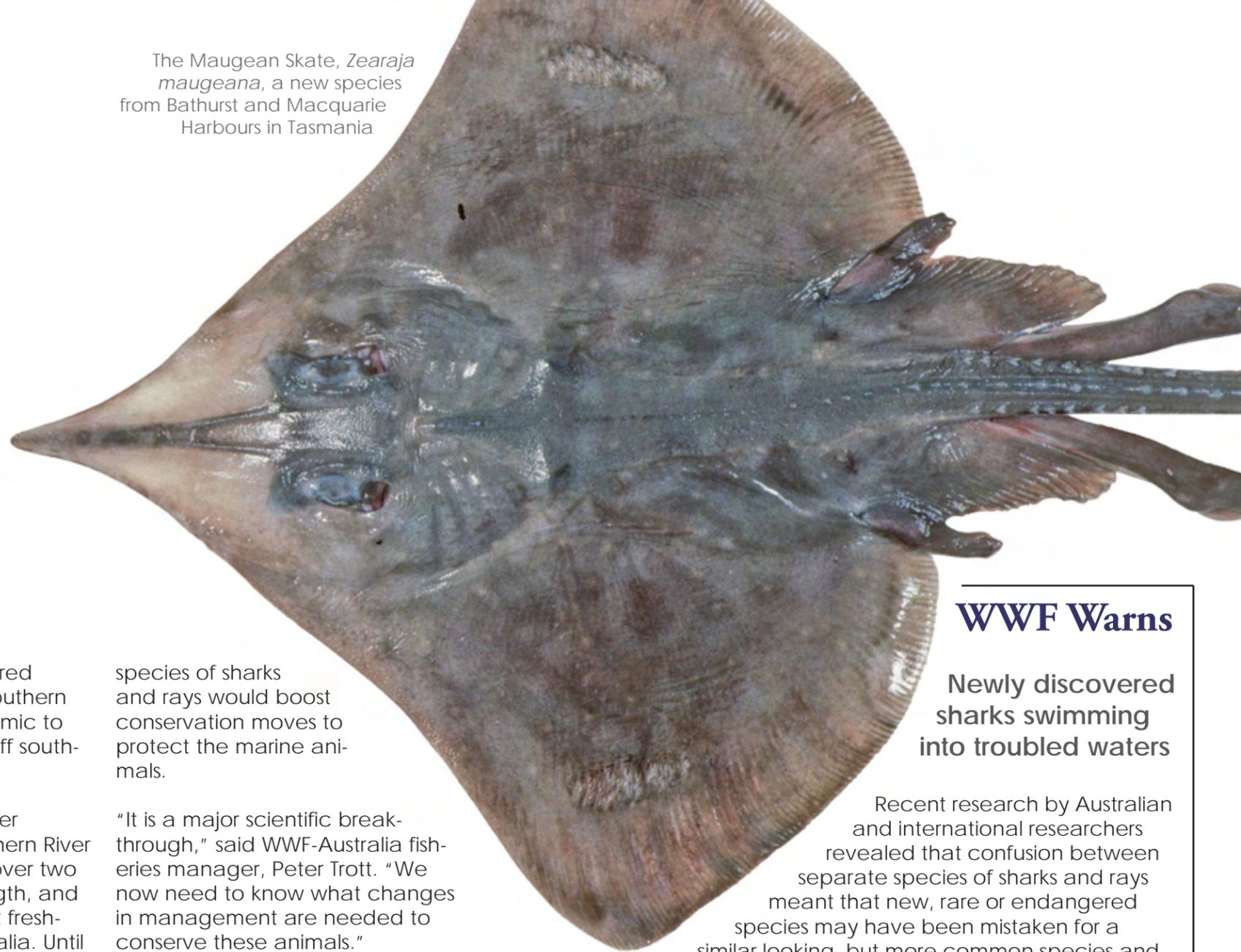
THIS PAGE: Tamar Visitor Centre offers a variety of educational venues. LEFT: Feeding time at Tamar. RIGHT: Local hero, fisherman Seu Zeca. FAR RIGHT: A jar with plastic stomach contents from a sea turtle, containing mostly indigestible plastic





Edited by Peter Symes

The Maugean Skate, *Zearaja maugeana*, a new species from Bathurst and Macquarie Harbours in Tasmania



Over 100 new sharks and rays classified

Australian scientists have used DNA techniques to catalogue and describe 100 new species of sharks and rays in Australian waters.

More than 90 of the newly named species were already identified by scientists and described in book *Sharks and Rays of Australia* published in 1994 but remained scientifically undescribed. The new names and descriptions will now be featured in a revised 2009 edition of the book by Australia's peak scientific body.

One rare species of carpet shark catalogued was found in the belly of another shark.

Some of the new species named include:

- * The endangered Maugean Skate shark, closely related to an ancestor from the Gondwanan period in Australia some 80 million years ago, found at the southwest of the island state of Tasmania. It is one of the only skates in the world found in brackish or fresh-water, and its survival could be affected by climate change, said the scientists.

- * The critically endangered Gulper shark, or the Southern Dogfish, which is endemic to the continental shelf off southern Australia.

- * The Northern Freshwater Whipray and the Northern River shark, which grow to over two meters (six feet) in length, and are among the largest fresh-water animals in Australia. Until recently, these were confused with similar marine species.

Environment group WWF-Australia said the cataloguing of 100 new

species of sharks and rays would boost conservation moves to protect the marine animals.

"It is a major scientific breakthrough," said WWF-Australia fisheries manager, Peter Trott. "We now need to know what changes in management are needed to conserve these animals."

The confusion between separate species of sharks and rays meant that new, rare or endangered species may be mistaken for more common species and inadvertently taken by fishermen. ■

WWF Warns

Newly discovered sharks swimming into troubled waters

Recent research by Australian and international researchers revealed that confusion between separate species of sharks and rays meant that new, rare or endangered species may have been mistaken for a similar looking, but more common species and inadvertently taken by fishermen.

"We are literally fishing in the dark when it comes to sharks and rays," said WWF-Australia fisheries manager Peter Trott. "In many cases, we simply do not know what species we are plucking from Australian waters."

"We now need to know what changes in management are needed to conserve these animals, and that is what the experts will try to answer."

Trott said he expected the scientists to urgently call for more funding to research sharks and for stronger fisheries management to identify those sharks that were caught by commercial fishers. ■



Gulper shark, or Southern Dogfish





WOLFGANG LEANDER

The shark with no dad



Tigershark in the wild (not related to the story)

Artificial Shark Womb Makes Progress

Unborn wobbegong sharks are being raised inside an artificial womb as part of a world-first marine conservation experiment in Port Stephens, Australia.

Scientists hope the technology can be applied to the critically endangered Grey Nurse shark, whose young often eat each other inside the womb.

The wobbegong shark embryos have survived their first week inside the sterile tank at the Port Stephens Fisheries Centre, and will be ready to be "born" into a larger tank in two or three weeks.

"So far, the pups look quite happy," the project's senior researcher, Dr Nick Otway, said. "They like to huddle up in the corner, but when one starts wriggling, they all start wriggling and swimming around a bit."

If the experiment is successful, Grey Nurse pups will eventually be raised in the artificial uterus.

Like wobbegongs, which are not a threatened species, Grey Nurse sharks hatch eggs inside their bodies and keep the pup sharks inside as they grow. Up to seven Grey Nurse pups are hatched at a time, but usually only the strongest two survive until birth after devouring their siblings. ■

VIA UNDERWATER.COM.AU

DNA testing have confirmed the second-known instance of "virgin birth" in a shark.

Scientists have confirmed the second-ever case of a "virgin birth" in a shark, indicating once again that female sharks can reproduce without mating and raising the possibility that many female sharks have this incredible capacity. This compelling new study will be published today in the latest issue of the *Journal of Fish Biology*, a leading international journal. ■

Some like it hot

Australia's critically endangered Grey Nurse shark could benefit from global warming.

Scientists behind a new shark study say that the populations off the Australian east and west coast have been isolated from one another for more than 100,000 years. They say the cold water of the Victorian and South Australian coasts has prevented them from migrating towards each other.

But associate Professor Corey Bradshaw from the University of Adelaide said that as the sea temperature rises, the shark populations may join up, reducing the likelihood of extinction.

"They really don't often go through the Bass Strait," he told ABC News. ■

European Shark Week: 11-19 October 2008

The second annual European Shark Week will take place from 11-19 October, 2008. It's a unique opportunity for people across Europe to demonstrate their support for shark conservation in a way that can really effect change. During European Shark Week 2007, aquariums, dive clubs and other organisations helped host more than 100 events, and together, collected more than 20,000 signatures. www.europeansharkweek.org ■



EPSON Red Sea

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+ 11 Days diving trip to Cocos Island aboard an Undersea Hunter Group

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Images of the world

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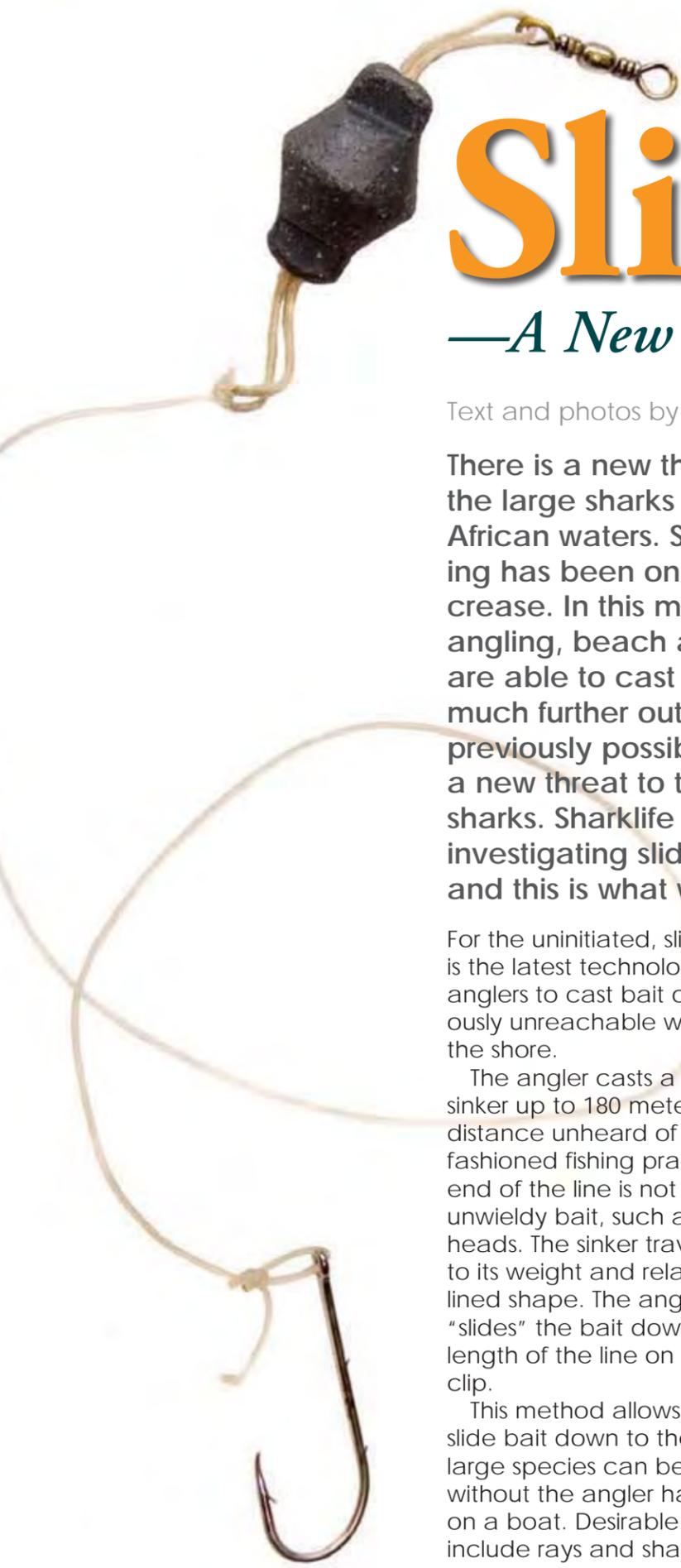
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Slide Fishing

—A New Threat to Large Sharks

Text and photos by Fiona Ayerst

There is a new threat to the large sharks of South African waters. Slide fishing has been on the increase. In this method of angling, beach anglers are able to cast their bait much further out than was previously possible, posing a new threat to the larger sharks. Sharklife has been investigating slide fishing, and this is what we found.

For the uninitiated, slide fishing is the latest technology allowing anglers to cast bait out into previously unreachable waters from the shore.

The angler casts a massive sinker up to 180 meters out, a distance unheard of using old-fashioned fishing practices. The end of the line is not held back by unwieldy bait, such as large fish heads. The sinker travels far due to its weight and relatively streamlined shape. The angler then “slides” the bait down along the length of the line on a non-return clip.

This method allows the angler to slide bait down to the sinker, and large species can be targeted without the angler having to get on a boat. Desirable species include rays and sharks.

Anglers are loading their reels with 300-400m of “Berkley Whiplash Braid” with a diameter of 0.17mm and a breaking strength of 50lbs. The reel is then topped up with 200m of monofilament 0.52 - 0.55mm line.

This set up is so effective, that an angler can have up to 600m of fishing line on his reels to maximize his chances of fighting large sharks. The hooks being used are barbed, chemically sharpened stainless steel, and are generally around a large size ten.

Mossel Bay

In Mossel Bay on the Western Cape in particular, anglers wade out from Diaz Beach onto a sandbank about 100 meters off the beach. The angler is able to cast out to around 250 meters and into the exact area patrolled by Great White sharks around Seal Island.

Seal Island sits about 800 meters off Diaz Beach. It seems this is well known to local anglers, and this popular fishing area produces good prospects, with the probability that a Great White will be hooked and possibly even landed.

Many of the sharks that frequent the Diaz Beach/Seal Island area are in the size range between two and 2.5 meters and are thus of a small enough size to land on the rocks or the beach. This generally occurs after a good

fight of up to 30 minutes, but the “fun” can last a lot longer (hours).

Interestingly, some of the fishermen interviewed indicated that they prefer catching Bronze Whalers, as these put up a much better fight than Great Whites and fight really hard—giving the angler hours of fun and much to celebrate when the fish is finally landed, exhausted.

Some of the fishermen we have seen slide fishing in Mossel Bay

have been approached by a Sharklife representative and confirmed that they were targeting sharks, and in particular, Great White sharks.

The anglers told us that they release some of the sharks, and that others manage to break loose after a fight.

Sharklife has been informed that if sharks do manage to break free of the hooks, they often get wrapped up in the strong lines as they twist to free themselves, and this can, and is

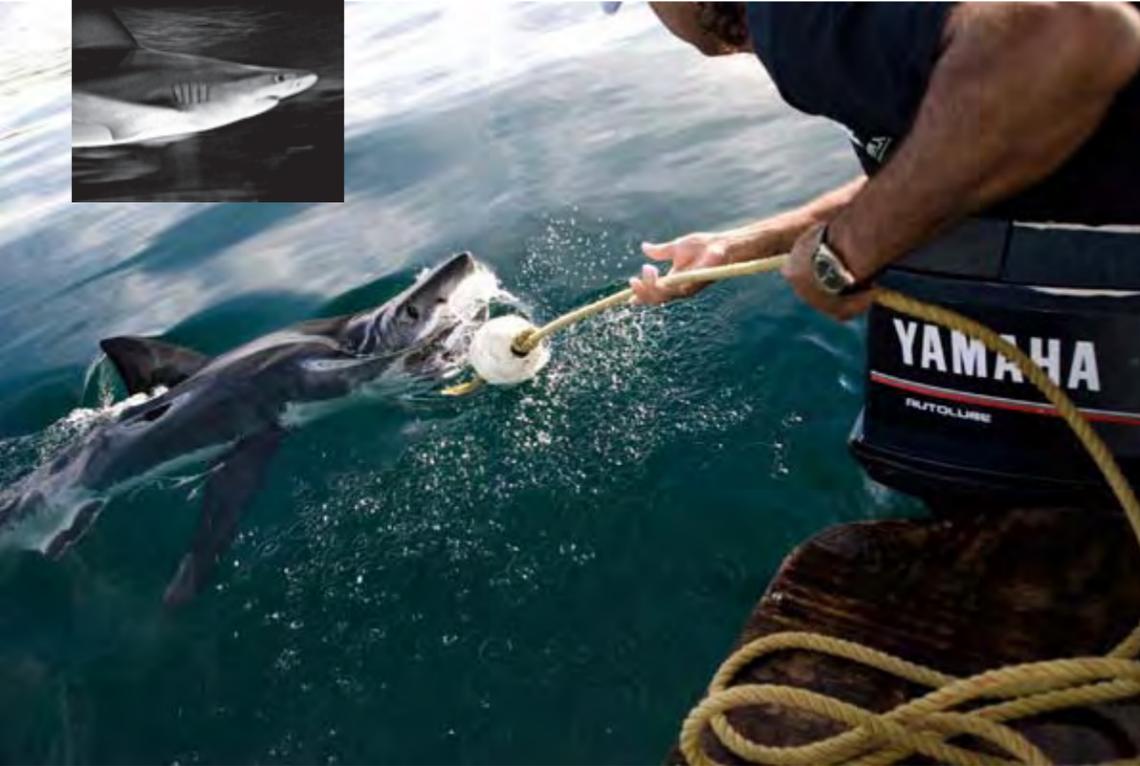
“The protected status of Great White sharks is not helping these predators in the slide fishing arena.”

causing injuries to their dorsal and pectoral fins. It is also possible that such animals may fall prey to their larger and stronger brethren after such an ordeal.

Other areas

It is apparent that slide fishing as a practice and means of catching large sharks is not limited to Mossel Bay. It is being used wherever large sharks and notably, Great Whites, are prevalent. This practice is being used in Macassar, Swartklip and Blue Waters further down the coast from Mossel Bay.





Slide Fishing

CLOCKWISE FROM TOP LEFT: Shark is lured towards boat with bait rope; The shark is within reach for hook removal; Reaching out to grab the line

Effects

SAMPLA (South African Marine Predator Lab) studies the sharks in Mossel Bay and have recently noticed that up to 60 percent of the local Great White sharks have slide fishing hooks in their jaws. Unfortunately, these hooks also carry large sinkers, which the shark may have to drag around with it for a very long time. The size and weight of the sinker

may also be affecting the sharks' ability to feed.

There are often up to 50 Great White sharks patrolling the bay and surrounding area. Mossel Bay's Diaz Beach is a tourist haven. Bathers and the sharks that patrol and feed off Seal Island have shared the same small patch of water for decades with only one incident resulting in the death of a scuba diver on the surface.

This fact is well known amongst the locals in Mossel Bay, even the slide fishermen interviewed. In fact, the shark cage diving industry has operated in the same area for at least 15 years.

Mossel Bay's Great White sharks have the capacity to draw tourists, and in turn, benefit this seaside town immensely on many different levels.

Sharklife thought initially that anglers might deny they were targeting Great White sharks to avoid prosecution. After a couple of fishermen were questioned, it seemed this was not the case. Currently,

prosecution is not a real threat in the minds of many fishermen. Anglers know it is unlikely they will ever be prosecuted and so, it appears, they continue to target Great White sharks.

If questioned by authorities, an angler simply has to state that he was fishing for another species, and he is "off the hook", as most sharks are not protected in this country. It is impossible for the authorities to argue, despite the fact that Great Whites are protected.

In South African law, a person is innocent until proven guilty beyond any

doubt. If an angler is prosecuted for catching a Great White and states in court that he was trying to catch a Bronze Whaler, but hooked a Great White in error, then the presiding magistrate has no choice but to acquit him of the charge. In fact, prosecution is rarely embarked upon, as it is largely a waste of money, and the system's already limited and over-stretched in resources.

The protected status of Great White sharks is not helping these predators in the slide fishing arena.





A SAMPLA researcher shows the sinker following its removal



Successful removal of hook from the shark's mouth

Barbed vs barb-less hooks

Sharklife notes some progression in that certain limits are shortly going to be enforced by the Western Cape Anglers Association (400 members) and the South Africa Shore Angling Association (SASAA) in all competitions. Most notably, slide fishing techniques can still be employed in fishing competitions but only with barb-less hooks. According to a spokesman for

the Cape Association, it is far harder to catch a shark using barb-less hooks, as the fish can easily slip itself off the line.

Apparently, the two methods of fishing—using barbed and barb-less hooks—are very different from each other, and anglers will need to practice with the same barb-less hooks used in competitions or else they will not succeed. Could this be good news for the Great Whites?

Unfortunately, the slide fishing hooks SAMPLA is finding on the sharks in Mossel Bay are barbed. It is possible that news of the change in competition rules has not yet filtered down to local anglers as the SASAA only changed this rule on 24 July 2008.

This particular hook was removed from a Great White Shark's mouth and that same hook being removed from that

shark. The barb is clearly visible.

Prohibition & safe zones

Sharklife proposes that the practice of slide fishing and the use of heavy shark tackle be prohibited in identified zones with high densities of Great White sharks. Anglers can continue to enjoy their sport without this intrusive and environmentally unfriendly method being employed in certain zones.

Various involved bodies are currently looking at codes of best practices together with manuals and training, in conjunction with anglers. Sharklife hopes the time is ripe whilst these methods are being developed and taught to anglers and whilst information is being disseminated for the authorities to look at the possibility to prohibit slide fishing entirely in certain zoned areas.

Scientists working in the field would be able to provide the required justification for these areas being zoned

as Great White shark "safe zones". Sharklife encourages Marine and Coastal Management (MCM) to urgently attend to this enquiry.

It appears that certain anglers in Mossel Bay are targeting the local Great White shark inhabitants. Anglers know that Great White sharks are a fully protected species and may not be caught. Sharklife understands that MCM are considering the prosecution of certain individuals who have been identified.

Whilst changes happen slowly, we can only hope that it is the case that at least those anglers governed by ruling bodies will stop using barbed hooks even when practising for competitions. This step by the SASAA and WCAA is to be viewed as the beginning of change and a step, albeit a small step, in the right direction.

Sharklife is a registered non-profit organisation addressing the exploitation of sharks and ocean fisheries in South Africa. For more information, please visit: www.sharklife.co.za. ■